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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/020,920 | 12/19/2001 | Helmut Mangold | 032301.603 | 8866 |

441 7590 06/15/2010

SMITH, GAMBRELL & RUSSELL
1130 CONNECTICUT AVENUE, N.W., SUITE 1130
WASHINGTON, DC 20036

| EXAMINER |
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| NGUYEN, NGOC YEN M |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1793 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 06/15/2010 | PAPER |

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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*Ex parte* HELMUT MANGOLD, WOLFGANG LORTZ,
RAINER GOLCHERT, and HELMUT ROTH

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Appeal 2009-015243
Application 10/020,920
Technology Center 1700

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Decided: June 14, 2010

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Before EDWARD C. KIMLIN, PETER F. KRATZ, and MARK NAGUMO, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

# DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 3-7, 10, and 11.

Claims 1 and 4 are illustrative:

1. Spherically shaped potassium doped pyrogenically produced metal or metalloid oxide particles having a breadth of distribution of particle size of at least 0.7 and having uniformly distributed potassium from about 0.03% to 20% by weight and which are doped by means of aerosol with a potassium salt solution, characterized in that the spherically shaped pyrogenically produced particle base component is produced by flame oxidation or flame hydrolysis and wherein the doped oxide particles have a BET surface between 1 and 1000 $m^2/g$, and wherein the pH of a 4% aqueous dispersion of the doped particles is more than 5.

4. A method of producing potassium-doped pyrogenic oxide spherical particles having a uniformly distributed potassium content of more than about 0.03% by weight and having a breadth of the distribution of particle size of at least 0.7 comprising,

A) sequentially feeding a gaseous mixture, including a pyrogenic oxide precursor, and an aerosol to form an aerosol-gaseous mixture, which is fed into a flame under conditions suitable for producing pyrogenic oxides by flame oxidation or flame hydrolysis from the precursor, to form the potassium-doped pyrogenic oxide spherical particles having a uniformly distributed potassium content of more than 0.03% by weight, and

B) recovering the formed pyrogenic-doped oxide spherical particles, which have BET surface of the doped oxide is between 1 and 1000 $m^2/g$ and the breadth of distribution of particle size of at least 0.7, from the reacted aerosol-gaseous mixture,

wherein the aerosol is homogeneously mixed before the reaction with the gaseous mixture and is prepared from a potassium chloride salt solution having a concentration of more than 0.5% by wt.

The Examiner relies upon the following references as evidence of obviousness:

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| Hall | 6,372,648 B1 | Apr. 16, 2002 |

| | | |
|---|---|---|
| Vanell | 6,423,638 B1 | Jul. 23, 2002 |
| Mangold | CA 2,223,377 | Jun. 5, 1998 |

Appellants' claimed invention is directed to spherically shaped potassium doped metal or metalloid oxide particles having the recited breadth of distribution of particle size, and a method of producing such particles. The method entails sequentially feeding a gaseous mixture comprising a pyrogenic oxide precursor and an aerosol to form an aerosol-gaseous mixture. The mixture is then subjected to flame oxidation or flame hydrolysis to form the potassium-doped pyrogenic oxide spherical particles. The aerosol is prepared from a potassium chloride salt solution having a concentration of more than 0.5% by wt.

Appealed claims 1, 3-7, 10 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mangold in view of Vanell or Hall.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner's rejection for the reasons set forth in the Answer, and we add the following primarily for emphasis.

There is no dispute that Mangold, one of the present inventors, discloses a process, like Appellants', comprising producing potassium doped pyrogentically produced metal or metalloid oxide particles by subjecting an aerosol gaseous mixture to flame oxidation or flame hydrolysis. Also, Appellants do not dispute the Examiner's finding that the present specification indicates that the processes of Mangold and Appellants employ the same apparatus (Ans. 9, last para.).

A principal argument advanced by Appellants is that Mangold does not disclose the claimed "breadth of distribution of particle size of at least 0.7", and that the reference does not disclose preparing the aerosol for the process from a potassium chloride salt solution having a concentration of more than 0.5% by wt. Appellants urge that Mangold is limited to the 0.5% by wt exemplified in EXAMPLE 5.

We are not persuaded by Appellants' argument. At the outset, we perceive no patentable distinction between the 0.5% wt. concentration exemplified by Mangold and the claimed amount "of more than 0.5% by wt.", which claimed amount encompasses concentrations only slightly greater than 0.5%. We agree with Examiner that one of ordinary skill in the art would reasonably expect that aerosols prepared from potassium chloride salt solutions having a concentration of 0.5% by wt and slightly more than 0.5% by wt would produce essentially the same spherically shaped potassium doped metal or metalloid oxide particles. *See Titanium Metals Corp. of America v. Banner,* 778 F.2d 775 (Fed. Circ 1985).

Also, as set forth by the Examiner, Mangold is not limited to the concentration exemplified but teaches that the preferred range for the amount of dopant is 1-10,000 ppm, and that the higher the salt concentration the higher the dopant concentration in the particle product (Ans. 9, 1st para.). Hence, notwithstanding Appellants' argument to the contrary, we agree with the Examiner that one of ordinary skill in the art would have understood that the salt concentration is a result effective variable which determines the concentration of potassium in the particle product. Also, since one of the present inventors is the same Mangold as the named inventor in the Mangold reference, we find it reasonable to place upon Appellants the burden of

demonstrating that processes fairly taught by Mangold do not, and can not, produce particle products within the scope of the appealed claims.

While Appellants make reference to assertions of unexpected results in the present specification, they have not, as noted by the Examiner, proffered on this record a side-by-side comparison with the closest prior art represented by the processes taught by Mangold. Appellants have not shouldered their burden of establishing unexpected results by simply pointing out some differences in process conditions for Mangold's EXAMPLE 5 and those exemplified in the present specification.

In addition, we fully concur with the Examiner that Vanell and Hall underscore the obviousness of obtaining a uniform particle size in CMP applications, one of the uses disclosed by Mangold.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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SMITH, GAMBRELL & RUSSELL
1130 CONNECTICUT AVENUE, N.W., SUITE 1130
WASHINGTON, DC 20036